

TECHNO Dual-Plate, Metal-Hinged, Wafer-Style Check Valves

API 594 Design – API 598 Tested

TECHNOLOGY



TECHNO — A well-known Brand with Past History and a Brand New Future!



- Techno Corporation of Erie, Pa. founded in 1952
- Inventor of Elastomer Hinge Dual Plate Check Valve providing for much improved flow at lowest pressure drops.
- Design first patented on November 20, 1952
- Grew to be one of the largest and most famous manufacturers of check valves in the United States.
- Acquired by Newflo Corporation on 12/4/1992. Remained in Erie Pa under same management.
- Mid 1996 Newflo (including Techno Corporation) was acquired by PCC (Precision Castparts Corporation).

- PCC moved Techno to Milbury, Mass in 1999 combining them with TBV (Titanium Ball Valve Co.) in a 54,000 ft² facility.
- Techno (along with TBV) was acquired by Cameron International in 2004.
- Techno product line transferred to Cameron Valve and Measurement's 250,000 ft² plant in Oklahoma City in 2010.
- US Valve LLC acquires Techno product line from Cameron in April of 2016.
- We are now entirely focused on producing low pressure drop check valves in our Linthicum, Maryland facility.
- Lead times are now a priority with > 100,000 parts in stock and options for same day shipment of most valves.



TECHNO Dual-Plate, Metal-Hinged, Wafer-Style Check Valves

DESIGN FEATURES

Body

US Valve's TECHNO™ brand's body design offers the following features:

- Compact wafer-style, one-piece design
- Center post fully supports the internal assembly without external pins or plugs
- No fugitive emissions to atmosphere is ensured due to its standard design, which eliminates through holes and pipe plugs in the body
- Maximum flow area reduces pressure loss
- Reduces installation space and time

Valve Plates

- The dual-plate design produces increased strength with reduced opening and closing time.

Clamp Plates

- Clamp plates offer additional strength to valve plates and allow seals to be changed easily.

Seals

- Specially designed flat, full-contact seals maintain positive shutoff at low working pressures. Unlike most other valves, these seals are replaced easily in the field.

Springs

- Torsion springs assist valve plate closure, preventing flow reversal. Consistent valve response ensures against slamming and water hammer.

Shaft

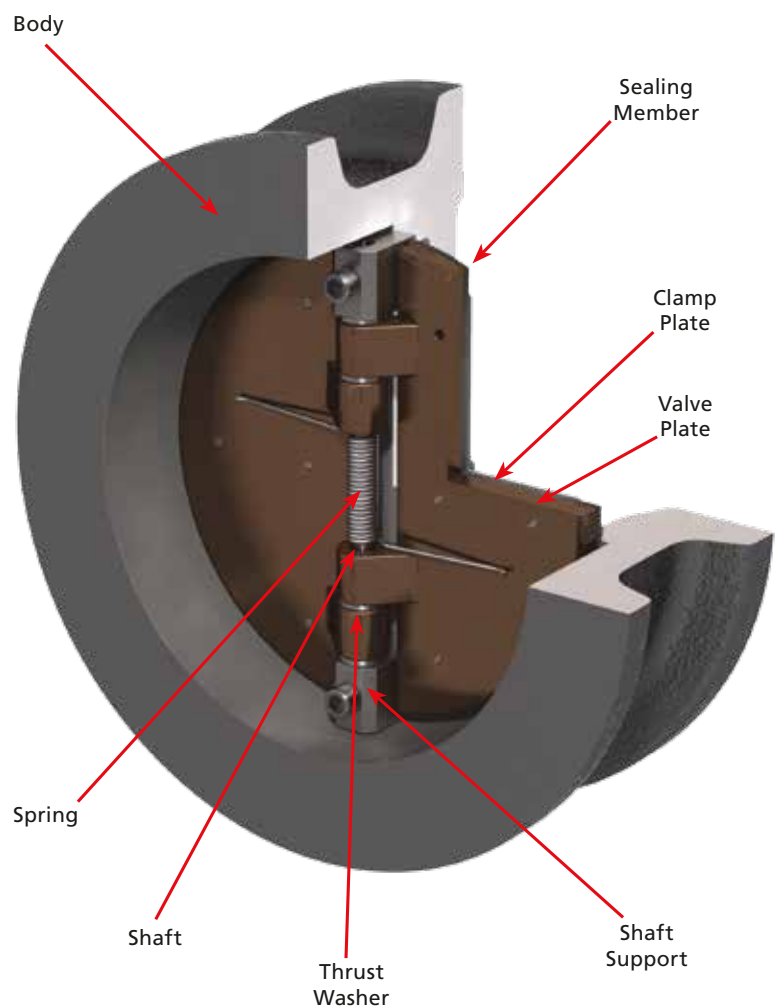
- The shaft features heavy-duty, corrosion-resistant construction.

Shaft Supports

- Shaft supports act as stops to prevent over-travel of valve plates. They are corrosion-resistant with large shaft-bearing surfaces and are easily removable for internal assembly, maintenance or change.

Thrust Washers

- Thrust washers reduce friction and wear of valve plate hinges.



Standard Models and Materials of Construction

Style	Body	Valve Plates	Seals	Springs	Trim*	ASME Class
5050	Cast Iron	316 SS	Buna-N	316 SS	316 SS	125
5051	Carbon Steel	316 SS	Buna-N	316 SS	316 SS	150
5051-316	316 SS	316 SS	Buna-N	316 SS	316 SS	150

* Trim items include: shaft, shaft supports, clamp plates, and fasteners. Teflon® or stainless steel thrust washers are standard.

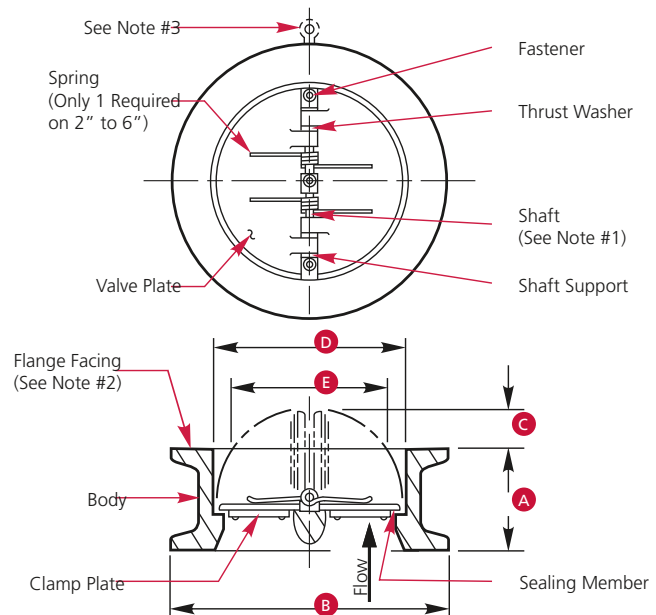
Optional Materials Selection

Spring Data	
Materials	Temperature Range **
316 SS	500° F
INCONEL X 750	1000° F
Seal Data	
Materials	Temperature Range **
Buna-N	-60° F to 225° F
EPDM	-40° F to 300° F
Viton®/FKM	-20° F to 400° F
Teflon	-20° F to 450° F
Silicone	-90° F to 500° F
Metal-to-Metal*	-400° F to 1000° F

**This temperature is for general guidance.

The figures may vary with application and body/internal materials.

*316 stainless steel thrust washers are standard with metal-to-metal seal option.



Note 1: Shaft must be in vertical position for horizontal flow application.

Note 2: Plain face (non-serrated) for style 5050 only.

Raised faces for all other carbon and stainless steel sizes.

Note 3: Lifting lug feature optional on 6" to 36" sizes.

General Dimensions (all dimensions in inches)

Valve Size	ASME Class	A	B	C	D	E [†]
2"	125	2-1/8	4-1/8	-	2-1/8	-
	150	2-3/8	4-1/8	-	2-1/4	-
2-1/2"	125	2-1/8	4-7/8	1/8	2-5/8	1-3/8
	150	2-5/8	4-7/8	-	2-3/4	-
3"	125	2-1/4	5-3/8	3/8	3-1/8	2-1/8
	150	2-7/8	5-3/8	-	3-3/16	-
4"	125	2-1/2	6-7/8	7/8	4-1/8	3-1/2
	150	2-7/8	6-7/8	1/2	4-3/16	2-7/8
5"	125	2-3/4	7-3/4	1-1/4	5-1/8	4-1/2
	150	3-3/8	7-3/4	5/8	5-3/16	3-1/2
6"	125	3	8-3/4	1-7/8	6-1/8	5-3/4
	150	3-7/8	8-3/4	1	6-3/16	4-3/4
8"	125	3-3/4	11	2-3/4	8-1/4	7-7/8
	150	5	11	1-1/2	8-5/16	6-5/8
10"	125	4-1/4	13-3/8	3-7/8	10-1/8	9-7/8
	150	5-3/4	13-3/8	2-3/8	10-3/16	8-3/4

[†]Minimum bore diameter of companion flanges.

Valve Size	ASME Class	A	B	C	D	E [†]
12"	125	5-5/8	16-1/8	4	12-1/8	11-1/2
	150	7-1/8	16-1/8	2-1/2	12-3/16	10
14"	125	7-1/4	17-3/4	3-1/2	14-1/8	12-1/2
	150	7-1/4	17-3/4	3	14-1/8	12
16"	125	7-1/2	20-1/4	4-3/4	16-1/8	15
	150	7-1/2	20-1/4	4-1/8	16-1/8	14-3/8
18"	125	8	21-5/8	5-5/8	18-1/8	16-7/8
	150	8	21-5/8	5	18-1/8	16-1/4
20"	125	8-3/8	23-7/8	6-1/2	20-1/8	18-13/16
	150	8-5/8	23-7/8	5-1/2	20-1/8	18-1/8
24"	125	8-3/4	28-1/4	8-1/4	24-1/8	22-5/8
	150	8-3/4	28-1/4	8	24-1/8	22-5/8
30"	125	12	34-3/4	10-1/4	30-1/8	28-5/8
	150	12	34-3/4	9-1/4	30-1/8	27
36"	125	14-1/2	41-1/4	12-1/2	36-9/16	34
	150	14-1/2	41-1/4	11	36-1/8	33

Body Materials	Valve Plate Materials
316 Stainless Steel – ASTM A351 Grade CF8M	316 Stainless Steel – ASTM A351 Grade CF8M*
Cast Iron – ASTM A126 Grade B	Bronze – ASTM B62 Alloy C836
Carbon Steel – ASTM A216 Grade WCB	Aluminum Bronze – ASTM B505 Alloy C952
Trim Materials	Spring Materials
316 Stainless Steel – For shaft, shaft supports, clamp plates, and threaded fasteners	316 Stainless Steel – ASTM A313; Standard in all valves; Maximum temperature is 500° F
	Inconel X – ASTM B166; Optional for temperatures above 500° F

* 316 SS is standard for all body styles.

ASME Pressure – Temperature Rating Maximum Non-Shock Pressure – psi

Temperature ° F	Class 125			Temperature ° F	Class 150	
	Cast Iron				Carbon Steel	316 Stainless Steel
	2" to 12"	14" to 24"	30" to 36"			
150° F	200	150	150	100° F	285	275
200° F	190	135	115	200° F	260	240
225° F	180	130	100	300° F	230	215
250° F	175	125	85	400° F	200	195
275° F	170	120	65	500° F	170	170
300° F	165	110	50	600° F	140	140
325° F	155	105	-	700° F	110	110
350° F	150	100	-	800° F	80	80
400° F	140	-	-	900° F	50	50
450° F	125	-	-	1000° F	20	20
Hydrostatic Test – psi	350	265	265	Hydrostatic Test – psi	450	425

CAUTION: Maximum valve temperature rating often is limited by seal and spring materials.

INDUSTRY STANDARDS

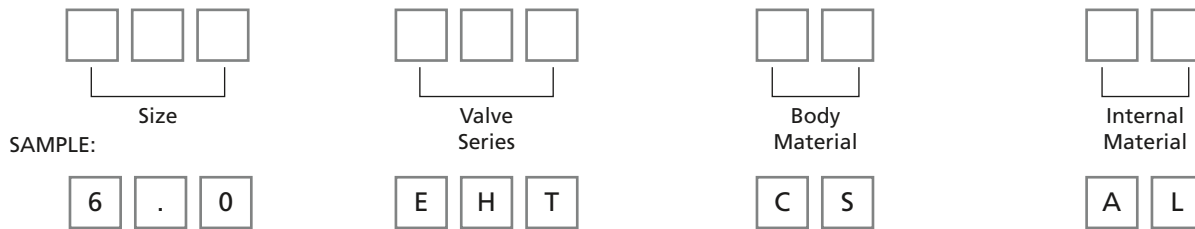
TECHNO dual-plate, metal-hinged, wafer-style check valves are designed, rated, and manufactured in accordance with the following industry standards:

- ANSI B16.1, ANSI B16.34 and ANSI B16.5
- ASME Sections II and VIII
- API 594, except face-to-face dimensions of 2-1/2" to 12" cast iron valve (Style 5050)

If required by your job needs, US Valve can provide the requisite documentation to verify our valves meet the stringent design and material criteria set forth in the above standards. Also, we can perform and document the hydrostatic and leak tests required by API 598, MSS-SP-61 or other such guides.

HOW TO ORDER

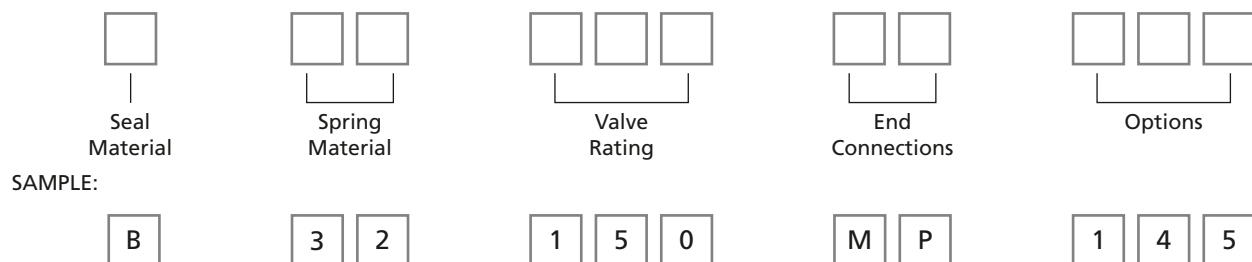
Size	Valve Series	Body Material	Internal Material
1.0 = 1"	DPW = Dual-Plate Wafer Check, ASME Rated 5050, 5051, 5053	AL = Aluminum	AL = Aluminum
1.3 = 1-1/4"	EHF = Elastomer-Hinged Flanged 5003, 5004, 5102, 5107	BR = Brass 5002 Only	BR = Brass (5002 Only)
1.5 = 1-1/2"	EHW = Elastomer-Hinged Short-Form Wafer 5118, 5296	CI = Cast Iron	BZ = Bronze (DPW)
2.0 = 2"	EHT = Elastomer-Hinged Threaded Valve (5002)	CS = Carbon Steel	AB = Aluminum Bronze (DPW)
2.5 = 2-1/2"	EHV = Elastomer-Hinged Victaulic®-Grooved Valve (5103)	WC = Cast Steel, A216 Grade WCB	CS = Carbon Steel
3.0 = 3"	EHP = Elastomer-Hinged Plain End Valve (5104)	36 = 316 Stainless Steel	WC = Cast Steel, A216 Grade WCB
4.0 = 4"			36 = 316 Stainless Steel
5.0 = 5"			XX = Other**
6.0 = 6"			
8.0 = 8"			
10.0 = 10"			
12.0 = 12"			
Through			
36.0 = 36"			
XXX = Other**			



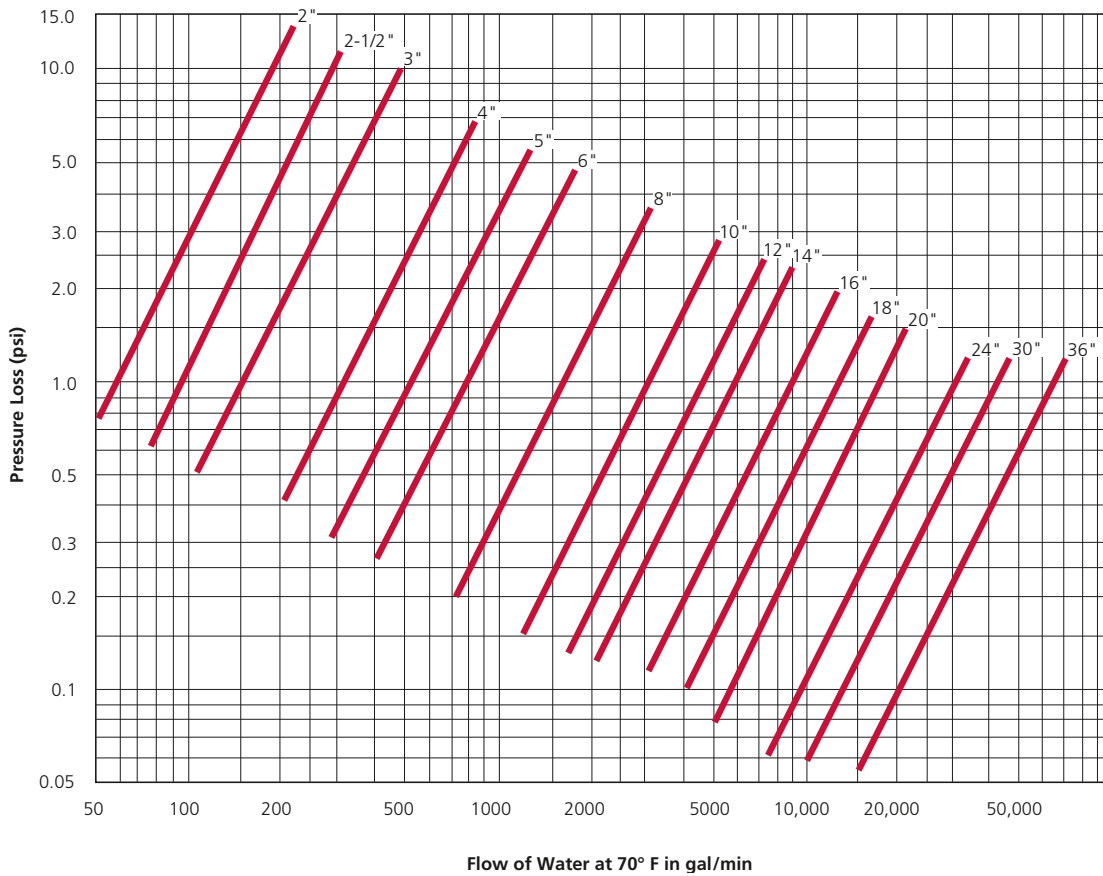
Seal Material	Spring Material	Valve Rating	End Connections	Options*
B = Buna-N	32 = 302 SS	A12 = ASME 125	RF = Raised Face	Consult US Valve for options such as: Epoxy Coat Drain Holes Bypass Holes Special Ports Special Paint Fasteners Etc.
U = EPDM	36 = 316 SS	A15 = ASME 150	FF = Flat Face	
M = Metal (Metal-Hinged Valves Only)	75 = INCONEL X-750	A60 = ASME 600	MP = Male Threaded Ends	
S = Silicone	NS = No Spring	A30 = ASME 300	FP = Female Threaded Ends	
T = Teflon (Metal-Hinged Valves Only)	XX = Other**	050 = 50 psi-cwp	VC = Victaulic Grooved	
V = Viton A		100 = 100 psi-cwp	PE = Plain Ends	
XX = Other**		125 = 125 psi-cwp	XX = Other**	
		150 = 150 psi-cwp		
		300 = 300 psi-cwp		
		450 = 450 psi-cwp		
		XXX = Other**		

* We assign option suffix numbers to identify special valves. Once an option number is assigned to specify the special valve, that number can then be used to reorder an identical valve. Consult US Valve for options.

** Other: "X", "XX" or "XXX" indicates a choice other than standards shown.
Note: Certain combinations are not available.



Pressure Drop Charts for Water Service (Based on Horizontal Flow Application)



Flow Coefficients

Valve Size	C_v^*
2"	58
2-1/2"	92
3"	160
4"	320
5"	525
6"	800
8"	1700
10"	3000
12"	4700
14"	5950
16"	9000
18"	13,500
20"	18,000
24"	32,000
30"	45,000
36"	69,000

NOTE: Recommended maximum flow rates may be reduced due to maximum velocity ratings. Consult Technical Data section for details. * C_v = the number of US gal/min that will result in 1 psi pressure loss across the valve at a temperature of 60° F.

INSTALLATION INFORMATION

The valve must be installed with the shaft in the vertical position for horizontal flow applications. The valve body is marked with a flow direction arrow and "TOP" to assist with proper positioning.

The torsion spring design allows valve plates to open and close with low pressures. Valves are not recommended on discharge of reciprocating compressors and pumps.



Techno Holdings LLC
812E Oregon Avenue
Linthicum, MD 21090

T: 410.636.3380
F: 410.789.1009
info@usvalve.com
www.usvalve.com